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GENERALLY-BASED MOBILITY/TERRAIN DATA BASES(U)
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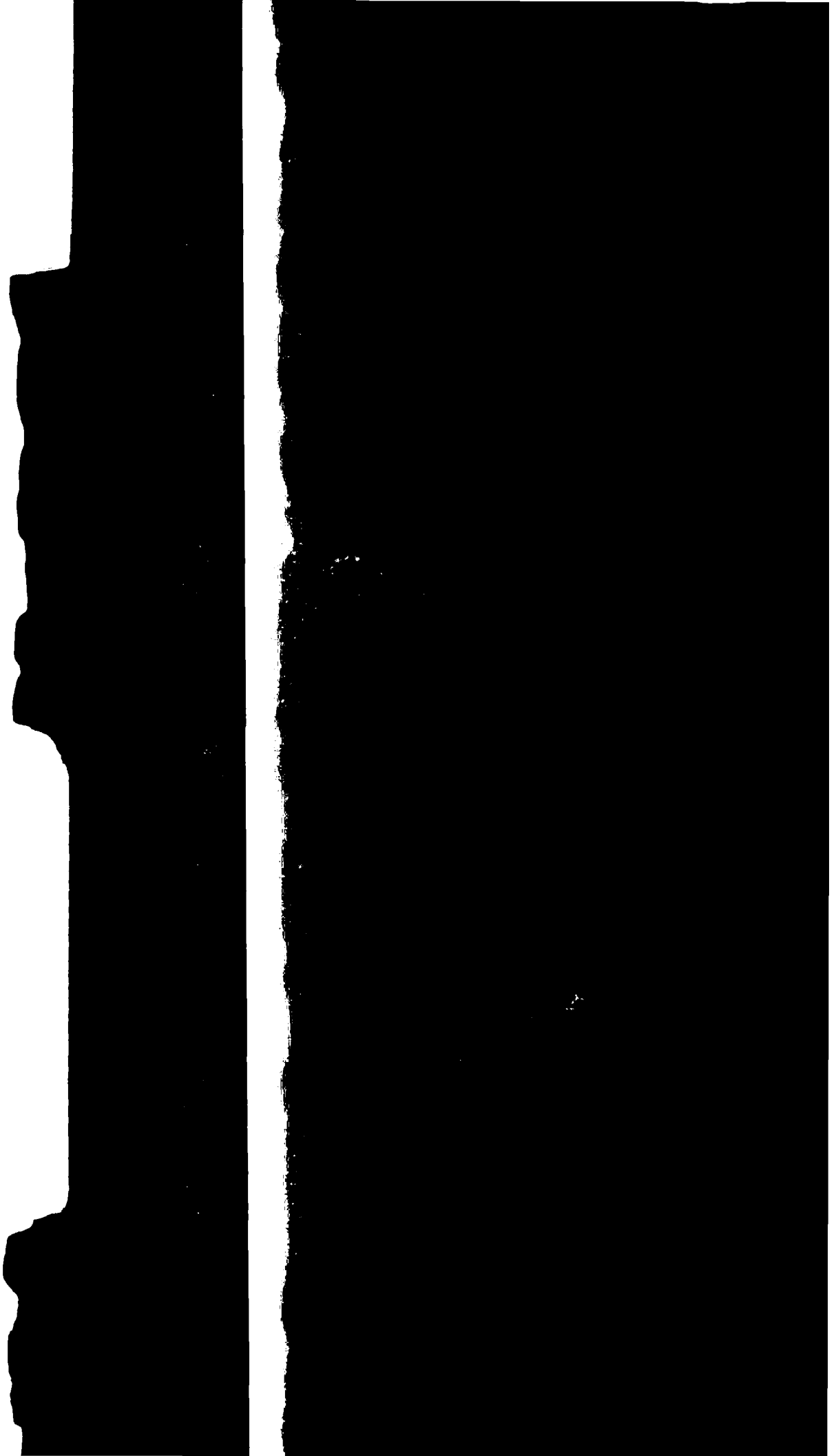
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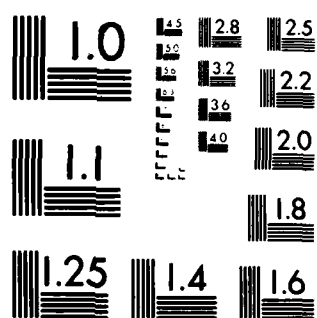
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AD-A149 114

Generically - Based Mobility/Terrain Data Bases

First Interim Report

by

Peter Jessl

Werner Köppel

October-December 1984

United States Army

EUROPEAN RESEARCH OFFICE OF THE U.S. ARMY

London England

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Thirty eight terrain cells have been selected and investigated within the FRG, with selection based on tree species, agricultural land use, soil types, and geology. Aerial photos were used to accurately map distributions. Approximately 24 sites were identified as being critical to Vehicle mobility, and detailed terrain descriptions, using factors required by the Army Mobility Model (AMM) were collected. Six sites have been selected and examined for studies of relations among soil dynamics, generic descriptors, and Vehicle mobility indexes. <i>Continued on reverse side regarding 10.11</i>		

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Based on the proposed research work and the technical requirements as specified under section C-I of the research contract the following results have been achieved within the period of October to December 1984:

Task 1

Concerning task 1 - development of a method of assembling generically-based mobility terrain data bases - a total of 38 terrain cells were selected and investigated within the FRG. Based on distribution of tree species, agricultural land-use, soil types and geology established by various maps and statistical information sites were selected within the cells of interest. At all site locations terrain data were taken in terms of the generic terrain data base description system as well as compatible to the Army Mobility Model (AMM). Areal photographs were acquired in order to support the vegetation and land-use distribution characteristics. (tasks 1 a and 1 b). The regionalization concept previously established by WES proved to be a suitable descriptor of the cell landform and terrain characteristics. Various external parameters which are and cannot be part of the regionalization concept were observed and need to be taken care of while applying the generic data bases. Such are scattered occurrences of sand dunes, hedgerows, drainage ditches, urbanization etc.

Task 2

Concerning task 2 - initiation of the development of a procedure for quantitatively estimating the reliability of generically-based mobility terrain data bases - a number of approx. two dozen sites were identified as being critical to vehicle mobility within the cell areas visited under task 1 b. Sites were described in terms of regular AMM terrain data in order to allow detailed comparisons between predicted vehicle performance and prevailing terrain condition met on the ground (2a).

Task 3

Concerning task 3 - initiation of the development of a procedure for determining the relations among soil dynamic parameters and conventional mobility index numbers (or descriptors) - six sites were selected within the vicinity of Frankfurt in a first step (3a). Sites were exhibiting fine grained soils and also varying in land-use. Shear load-displacement data were taken for these sites at different depths with a WES direct shear device (3c). Description of sites was done in those terms required by the generic and AMM classification system. Meteorological and climatological data were ordered for the nearest wather stations through the federal weather services.



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